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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,469	02/04/2004	Masao Ishizu	040041	1356

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EXAMINER	
MURALIDAR, RICHARD V	

ART UNIT	PAPER NUMBER
2838	

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/770,469	ISHIZU, MASAO	
	Examiner	Art Unit	
	Richard V. Muralidar	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02/04/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: applicant's claim language and specification has numerous grammatical errors. Applicant is urged to accomplish a thorough proof-check of the disclosure to conform to the guidelines of standard written English. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103[a] which forms the basis for all obviousness rejections set forth in this Office action:

> [a] A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103[a] as being unpatentable over Bean et al [US 6737830] in view of Hanada [US-6429623].

With respect to Claim 1, Bean teaches a charger for a mobile phone [Fig. 6; col. 4 lines 24-28] comprising: a power input portion [Fig. 3 plug 212]; a switching power source portion [Fig. 1 power converters 110, 130; col. 3 lines 48-51; col. 7 lines 17-23] supplied with electric power by the power input portion; a control portion [regulator; col. 5 lines 12-16] having a micro-computer logic circuit [Bean does not specify his voltage regulator/ control portion as a microcomputer] supplied with electric energy by the switching power source portion; a capacitor portion having plural electric double-layer

capacitors [col. 5 lines 51-65; col. 6 lines 14-18; only one capacitor is described, however it would be of relative ease to add as many capacitors in either series or parallel to attain the design voltage/current capacity required by the individual charger/device] to accumulate the electric energy supplied by the control portion; and an output portion to supply the electric energy accumulated in the electric double-layer capacitors to a battery of a mobile phone with constant voltage [col. 5 lines12-16; col. 7 lines 7-16]. Bean does not teach a microcomputer control portion, or a feedback circuit that controls the charging of the capacitors.

Hanada teaches a microcomputer control portion [Fig. 1 microcomputer 30] supplied with electric energy by the switching power source portion [Fig. 1 dc-dc converter 51]; a feedback circuit [Fig. 1 voltage detector 41] to transmit charging state of the electric double-layer capacitors [Fig. 1 ultra-capacitor 20; col. 1 lines 22-28] to the control portion; wherein: charge and discharge of the electric double-layer capacitors and supplied voltage are controlled by the control portion as to correspond to the charging state of the electric double-layer capacitors transmitted by the feedback circuit Fig. 1; col. 4 lines 61-67, col. 5 lines 1-10 and lines 25-31].

Bean and Hanada are analogous power supplies that use an electric double layer capacitor for energy storage. At the time of the invention it would have been obvious to one of ordinary skill in the art to add microcomputer control to Bean for the benefit of using an easily replaceable and widely available component, as well as for the added benefits of decreased cost, weight, and reprogram ability of the microcomputer.

With respect to Claim 2, Bean teaches the power input portion is alternatively connected to a commercial power source and a car battery [col. 8 lines 8-17].

With respect to Claim 3, Bean teaches the charger for mobile phone as set forth in claim 1 or claim 2, wherein the plural electric double-layer capacitors are serially connected [col. 5 lines 51-65; col. 6 lines 14-18; only one capacitor is described, however it would be of relative ease to add as many capacitors in either series or parallel to attain the design voltage/current capacity required by the individual charger/device].

With respect to Claim 4, Bean teaches the charger for mobile phone as set forth in claim 1 or claim 2, wherein the control portion controls as that current (I.sub.1) to charge the electric double-layer capacitors is much larger than current (I.sub.2) running from the electric double-layer capacitors to the output portion to charge the battery of the mobile phone [col. 5 lines 60-65; this is inherent to Bean's charger since the boost period that takes seconds to charge the capacitor would necessarily have to be larger than the subsequent slower battery charging period which could take hours].

With respect to Claim 5, Bean teaches the charger for a mobile phone as set forth in claim 4, wherein 5<or = I_1 / I_2 <= 50 [col. 5 lines 60-65 range includes capacitor boost times of 1.5 minutes and a battery charge time of 1.5 hours, which is 50 times longer than 1.5 minutes. Since the same power is being transferred from the capacitor to the battery, but at a much slower rate, the current ratio will be inversely related to the time required. So if it takes 50 times longer to charge the battery, the

current flowing will be 50 times smaller in order to maintain the Power In = Power Out relationship].

With respect to Claim 6, Bean teaches the charger for a mobile phone as set forth in claim 1 or claim 2, wherein the plural electric double-layer capacitors are serially connected [col. 5 lines 51-65; col. 6 lines 14-18; only one capacitor is described, however it would be of relative ease to add as many capacitors in either series or parallel to attain the design voltage/current capacity required by the individual charger/device]. Bean does not teach individual sensing and control feedback for each storage device.

Hanada teaches each terminal voltage of the electric double-layer capacitors is detected and transmitted to the control portion through the feedback circuit [Fig. 1 voltage detector 41 sends the sensed voltage across ultra-capacitor 20 to microcomputer 30], total voltage value is calculated by program control of the micro-computer logic circuit [Fig. 1 microcomputer 30] of the control portion as the terminal voltage is within an operational range, and the total voltage value is supplied to the plural electric double-layer capacitors as supplied voltage.

Bean and Hanada are analogous power supplies that incorporate an electric double layer capacitor. At the time of the invention it would have been obvious to one of ordinary skill in the art to provide individual sensing and control feedback for each energy storage element to Bean for the purpose of knowing exactly how much energy each storage element require; which would eliminate cases of over and/or under charging of the storage elements.

With respect to Claim 7, Bean teaches the charger for a mobile phone as set forth in claim 1 or claim 2, wherein the plural electric double-layer capacitors are serially connected, and the switching power [Fig. 1 power converters 110, 130; col. 3 lines 48-51; col. 7 lines 17-23] source portion is controlled [regulator; col. 5 lines 12-16]. Bean does not teach a microcomputer logic circuit that accomplishes feedback program control.

Hanada teaches program control by the microcomputer logic circuit [Fig. 1 microcomputer 30] of the control portion as that current of the maximum power of the switching power source portion is supplied to the electric double-layer capacitors with detecting and transmitting each terminal voltage of the electric double-layer capacitors to the control portion through the feedback circuit [Fig. 1 voltage detector 41 sends the sensed voltage across ultra-capacitor 20 to microcomputer 30].

Bean and Hanada are analogous power supplies that incorporate an electric double layer capacitor. At the time of the invention it would have been obvious to one of ordinary skill in the art to provide a microcomputer logic circuit with control feedback for each energy storage element to Bean for the purpose of knowing exactly how much energy each storage element require; which would eliminate cases of over and/or under charging of the storage elements.

Claims 8 and 9 are rejected under 35 U.S.C. 103[a] as being unpatentable over Bean et al [US 6737830].

With respect to Claim 8, Bean discloses an operation method of charger for a mobile phone [col. 11 lines 61-67 and col. 12 lines 1-59 address the method]

comprising the steps of: connecting a capacitor portion having plural electric double-layer capacitors [col. 5 lines 51-65; col. 6 lines 14-18; only one capacitor is described, however it would be of relative ease to add as many capacitors in either series or parallel to attain the design voltage/current capacity required by the individual charger/device], a power input portion of a charger [Fig. 3 plug 212] having the power input portion and an output portion to a commercial power source or a car battery for boosting charge [col. 8 lines 8-17]; separating the power input portion for carrying the charger [col. 6 lines 55-61]; and connecting the output portion of the charger to a battery of a mobile phone to charge for a period of time 5 to 50 times longer than that of the boosting charge [col. 5 lines 60-65 range includes capacitor boost times of 1.5 minutes and a battery charge time of 1.5 hours, which is 50 times longer].

With respect to Claim 9, Bean discloses a charging apparatus for mobile phone comprising a stationary public charger connected to a commercial power source, and plural portable chargers [col. 4 lines 24-28; Figs. 3-6], each of which has a capacitor portion composed of electric double-layer capacitors to accumulate electric energy supplied by the public charger in connected state, and a constant voltage output portion [col. 5 lines12-16; col. 7 lines 7-16] detachably connected to a battery of a mobile phone to charge, detachably connected to the public charger.

Claims 10-14 are rejected under 35 U.S.C. 103[a] as being unpatentable over Bean et al [US 6737830] in view of Nikolic [US 5423407].

With respect to Claim 10, Bean teaches the charging apparatus for a mobile phone as set forth in claim 9, but does not specify that the charger is of the public coin-vended type.

Nikolic teaches the stationary public charger [Fig. 1 charging system 10] is a box-shaped charger [Fig. 3] installed in convenience stores, hotels, stations, and public spaces [col. 1 lines 7-11], and having a coin slot [Fig. 1 coin slots 22, 24, 26, 28] a sensor switch to detect feeding of a coin to the coin slot [Fig. 6 the sensors at 5, 10, 25 cents; col. 5 lines 7-9] and an on-off control means to control as electric energy is supplied to the capacitor portion of the portable charger in connected state by detection work of the sensor switch [microprocessor 50; col. 5 lines 13-17].

Bean and Nikolic are analogous battery chargers that provide untethered power to rechargeable devices. At the time of the invention it would have been obvious to one of ordinary skill in the art to combine a power supply with means of payment such as the coin-operated type, to Bean's untethered rapid charger for the benefit of receiving payment for rapid/boost charging services rendered by the merchant. This serves to multiply the use of mobile rechargeable devices, as users would no longer be tied close to an AC outlet, and also provides financial incentive for merchants to set up these boost chargers everywhere for public use.

With respect to Claim 11, Bean teaches the charging apparatus for a mobile phone as set forth in claim 9 or claim 10, wherein the stationary public charger is provided with a power source portion to rectify and decrease AC power from the commercial power source [col. 5 lines 1-20], a battery to accumulate DC power from

the power source portion, a constant power control portion to control as constant power is supplied to the portable charger in connected state, and a terminal to which the portable charger is detachably connected [the limitations of this claim have previously been met by those of the preceding claims 1-10].

With respect to Claim 12, Bean teaches the charging apparatus for a mobile phone as set forth in claim 9 or claim 10, wherein the capacitor portion of the portable charger is composed of a serial connection of the electric double-layer capacitors to accumulate electric energy supplied by the public charger [the limitations of this claim have previously been met by those of the preceding claims 1-11].

With respect to Claim 13, Bean teaches the charging apparatus for a mobile phone as set forth in claim 9 or claim 10, wherein current (I.sub.1) running from the public charger to the capacitor portion of the portable charger to charge is much larger than current (I.sub.2) running from the capacitor portion to the constant voltage output portion to charge the battery of the mobile phone [the limitations of this claim have previously been met by those of the preceding claims 1-12].

With respect to Claim 14, Bean teaches the charger for mobile phone as set forth in claim 13, wherein 5<or = I_1 / I_2 <= 200 [col. 5 lines 60-65 range includes capacitor boost times of 5 seconds and a battery charge time of 0.27 hours, which is 200 times longer than 5 seconds. Since the same power is being transferred from the capacitor to the battery, but at a much slower rate, the current ratio will be inversely related to the time required. So if it takes 200 times longer to charge the battery, the current flowing will be 200 times smaller in order to maintain the Power In = Power Out relationship].

Claim 15 is rejected under 35 U.S.C. 103[a] as being unpatentable over Nikolic [US 5423407] in view of Bean et al [US 6737830].

With respect to Claim 15, Nikolic teaches a charging method for a mobile phone comprising the steps of: installing a box-shaped public charger in convenience stores, hotels, stations, and public spaces [col. 1 lines 7-11]; connecting a portable charger to the public charger and feeding a coin to the public charger for boosting charge; separating the portable charger from the public charger for carrying; and connecting the portable charger to a mobile phone to charge while the mobile phone is being carried [col. 4 lines 26-68; col. 5 lines 1-17]. Nikolic does not teach the portable chargers having electric double-layer capacitors.

Bean teaches the portable chargers are comprised of electric double-layer capacitors [col. 5 lines 51-65; col. 6 lines 14-18].

Nikolic and Bean are analogous battery chargers that provide untethered power to rechargeable devices. At the time of the invention it would have been obvious to one of ordinary skill in the art to utilize portable battery chargers having electric double layer capacitors with Nikolic's public power source for the benefit of being able to rapidly charge any depleted rechargeable battery. [Nikolic's coin vended power source is capable of sustaining a boost charge to users since it is connected to utility AC, and Bean's charger was expressly designed to work off of rapid, boost charges].

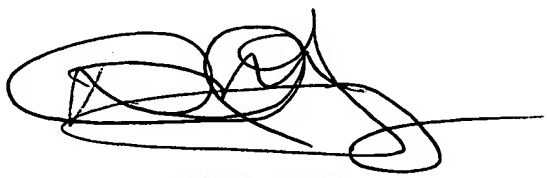
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Prior art [US 5263565] is cited for the disclosure of a combination pay parking meter and electric energy dispensing means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard V. Muralidar whose telephone number is 571-272-8933. The examiner can normally be reached on Monday to Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on Monday to Friday 8-5. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DAVID M. GRAY
PRIMARY EXAMINER

RVM
03/02/2006